RAJYA SABHA

Thursday, the 25th July, 1985/
3 Sravana, 1907 (Saka)

The House met at eleven of the clock, **Mr. Chairman** in the Chair.

ORAL ANSWERS TO QUESTIONS

Efficiency of the Kalpakkam Atomic Power Plant

*41. SHRI M. S RAMACHANDRAN: Will the PRIME MINISTER be pleased to state:

(a) the rate of efficiency achieved in power generation by the Kalpakkam Atomic Power Plant;

(b) the number of break-downs during the years 1983 and 1984, yearwise; and

(c) the steps, taken so far to reduce the break-downs?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND IN THE DEPARTMENTS OF ATOMIC ENERGY, SPACE, ELECTRONICS AND OCEAN DEVELOPMENT (SHRI SHIVRAJ V. PATIL): (a) Against a target of 1150 million units, Unit-I of the Madras Atomic Power Station generated about 1233 million units during 1984, with a capacity factor of 64.3 per cent and availability factor of 75.3 per cent. The unit has been working very efficiently from March, 85, after the maintenance outage and specially during the month of June, 1985 when the capacity factor was 95 per cent, and availability factor 100 per cent.

(b) The unit commenced commercial operation on 27.1.84 and there were 24 outages during 1984.

(c) The outages were primarily on account of conventional factors such as vibrations in the turbine, boiler feed pump etc. Preventive measures are being taken on a continuing basis.

SHRI M. S. RAMACHANDRAN: Sir, Tamil Nadu is one of the worst affected States and after the Kalpakkam plant the Government proposed that the power generated in Kalpakkam will be allotted not only to Tamil Nadu but also to other States. Then, at the repeated requests of the people and the Government of Tamil Nadu, the Central Government agreed that the power generated in Kalpakkam will be given to the State of Tamil Nadu. The people of Tamil Nadu were happy to hear this. But what Tamil Nadu wanted to gain has been lost by the frequent interruptions and lower rate of efficiency. Apart from the reason given by the hon Minister, one more reason for the frequent interruption is jelly-fish blocking the water flow. I would like to know from the hon. Minister whether any action has been taken to plug this factor and to see that the rate of efficiency which is now temporarily attained will continue to be maintained.

MR. CHAIRMAN: The question is whether Jelly-fish is obstructing the power generation and if so, what steps are being taken.

SHRI SHIVRAJ V. PATIL: Sir, jelly-fish did cause some difficulties. We have a tunnel constructed in the ocean through which water is taken to the plant for cooling purposes. And the Jelly-fish enter the tunnel and obstruct the flow of water to the plant. And it did cause some difficulties. The matter has been looked into and steps are being taken to see that this kind of thing does not occur again.

Sir, out of 24 outages, only 15 outages have been because of the

mal-functioning of the plant. Four outages have been because of the external factors which are not within the control of these who are running the plant. And these outages compared to the outages in the thermal plants are negligible. And these outages do not mean that the plant was out of use for a long time. At times, the outages were even for a period of half an hour also. This has happened in the first year. From the figures which I have given, it is very clear that in the month of June, 1985, after the repairs have been done, the plant has worked with 100 per cent availability factor and 94 per cent capacity factor.

SHRI SURESH KALMADI: Sir, the Minister in his written reply has misled the House. On the one hand he says that the unit was working very efficiently from March, 1985, and, on the other hand, he himself admits that there was a jelly fish invasion. I would like to tell him that this jelly fish first invasion was in April, 1985, whereas in his reply he says that the unit was working very efficiently from March, 1985. It may be on account of an oversight on the part of your officials but this fishy business is a very serious matter because this is not for the first time that this has happened. This thing had happened a year back also and the plant had stopped functioning for more than 10 days. There is an investment of Rs. 200 crores in this plant. I would like to know who is responsible for it. I believe that the scientists were out with a fishing net to stop the fish. This is not such a light matter. I want to know who is responsible for this negligence. In your reply you have stated that outage is due to the conventional factors, such as vibration of the turbine Sir, the vibration of the turbine is not a conventional factor. This is a very very serious matter. This has been pointed out to you by the General Electric Company of U.K. also who have asked you to reduce the vibration.

MR. CHAIRMAN: Two minutes are already over.

SHRI SURESH KALMADI: They have suggested certain modifications in respect of the vibrations that have been taking place for the last two years. But the Government have not taken steps to reduce the vibration.

SHRI M S. RAMACHANDRAN: Sir, from the press news I learn that certain proposals were made by the local officials to overcome the difficulty of vibration as also the jelly-fish blocking the tunnel. I would like to know from the hon. Minister whether those proposals have been considered and cleared, and, if not, how long it will take the Government to clear them.

SHRI SHIVRAJ V. PATIL: Sir, as far as the vibration in the turbine is concerned, turbine and the boilers are the conventional equipments. As far as the sophisticated equipments are concerned, there has been no difficulty and we have taken steps to see that the conventional equipments also do not suffer from any defects and there is no difficulty. As far as the jelly fish are concerned, there have been certain kinds of proposals given. One is to have some sort of bubbles coming all the time from the sea surface at the terminal of the tunnel. We are looking into it and into the cost-effectiveness of this proposal and we have also taken some steps to see that some sort of a wire-gauge is placed so that the jelly-fish does not enter the tunnel. But the jelly-fish were so powerful and they were coming in such big numbers that they broke the wire

gauge and went through it. We are going to have some sort of a strong mesh placed over there and we have already taken steps in that direction and there wil not be any difficulty. As far as jelly-fish is concerned, it is something beyond our control and we are not responsible for jellyfish in the ocean. As far as the vibration in the turbine and the boiler is concerned I have already said that the boiler and the turbine are the conventional equipments which are used in the thermal power stations also. We already know that sometimes there is vibration and some such things do happen and we have already taken steps in that direction and we shall see that these defects are overcome.

DR. LOKESH CHANDRA: Mr. Minister, you have pointed out that excessive vibration are a normal factor in the functioning of a nuclear power plant and yet the Government took special pains to invite the General Electric Company of the U. K. to look into the problem. It means that it was quite serious so much so that foreign experts had to be called in. Will the Government kindly point out whether the modifications suggested by the General Electric of U. K. will be implemented so that the vibrations do not hinder the operation of the plant? Secondly, Sir, the jellyfish have invaded the plant twice and it is really a sorry state of affairs that we cannot provide a meshing to keep them out. Will the Government appoint a Zoologist to study the influx pattern of jelly-fish to prevent any damage to the functioning of the plant in the future.

SHRI SHIVRAJ V. PATIL: I said that boilers and turbines are conventional equipments used in thermal power plants also and that a set kind of difficulties occur and steps have been taken. As far as accepting the advice given by some foreign company is concerned, BHEL supplied to equipments to us and they are consulting them and it is for them to see what is to be done. As far as jelly-fish is concerned, it is in the ocean and when they come, they come in very large number; they are very huge creatures also. The situation over there was such that we could not have open tunnel for taking water inside because the sand collects there. So we wanted to have something close tunnel and not open tunnel. Now, sometime the jellyfish is entering the tunnel causing obstruction. Some suggestions have been made but these suggestions are very costly. It is to be seen whether anything could be done so that the fish do not...

AN HON. MEMBER: Zoologists?

SHRI SHIVRAJ V. PATIL: As far as zoologist is concerned, when the jelly-fish problem occurs in the ocean we do have information because it is a periodical feature and we have only to see that they do not enter the tunnel.

MR. CHAIRMAN: Are they edible?

SHRI R. RAMAKRISHNAN: In fairness, I think we should congratulate the scientists at Kalpakkam and the Government that in spite of the jellyfish and vibration problems by and large the unit has been working satisfactorily. We are also thankful to the Prime Minister and the Government of India that some solution has been found for sharing the power of the second unit on 50 per cent basis to Tamil Nadu and 50 per cent for other States. I would like to know when the third unit is going to be commissioned and what will be the basis on which power from this unit will be shared.

SHRI SHIVRAJ V. PATIL: It will be premature for me to say anything about the third unit. I can speak about the second unit which is likely to become critical within one and a half months' time which will start producing electricity and electricity will be fed into the grid within 2 or 3 months' time. As far as the third unit is concerned, no decision has yet been taken.

SHRI M. M. JACOB: We are proud of the fact that Kalpakkam plant is completely indigenous where indigenous technology has been used. But the great advances made by our scientists in making nuclear power generation with complete indigenous technology has not been given adequate publicity. India has become almost self-reliant in designing and manufacturing nuclear power generation equipment including heavy water. Under these circumstances my question is, is it not necessary to give adequate publicity to our achievements because even China is lagging behind in this particular field and they have not reached our stage; they are depending on some other countries. So I would request the Minister to find out whether publicity could be given to it.

MR. CHAIRMAN: Question not relevant.

SHRI M. KADHARSHA: The problis not only with Kalpakkam; it is the same with other two power plants also. Even though Atomic Energy Commission was constituted in 1948, we have been able to build only 3 power plants in course of four decades. One unit or another in each power plant is shut down due to some technical snag or vibration or other defects. Tarapore power plant resumed power generation only from the 21st of this month. Similarly, Rajasthan Atomic Energy Power Plant was closed for more than 3 years due to leakage in end shield and we could not get it repaired even after three years. I would like to know from the hon. Prime Minister whether India is short of atomic power technology and whether skilled personnel from Kalpakkam have left the country for Gulf nations to seek fortunes, and is it the brain-drain which is also the reason for deterioration of power plants? If that is so, what is the Government going to do about it?

SHRI SHIVRAJ V. PATIL: Atomic technology is the most advanced and the most sophisticated technology To start with, it was not available in country. We relied upon technology which was imported from outside and established the Tarapur atomic power plant. Now, as far as the Rajasthan plant is concerned....

MR. CHAIRMAN: You do not have to answer all that. They are only preliminaries. You answer only about Kalpakkam.

SHRI SHIVRAJ V. PATIL: My answer is, the technology is complicated We have developed an expertise now to the extent that the Kalpakkam power plant has been established with our own technology. More than ninety per cent of the technology in the Kalpakkam plant is indigenous. True, some people have left the Kalpakkam plant and have gone abroad. But their number is very very small. It does not affect our capacity. As I said, the technology is very complicated and because of this, we do encounter certain difficulties but we do have the capacity to overcome them. In other power plants also, other kinds of power plants, difficulties are encountered and when we compare the performance of the atomic power plants, nuclear power plants, I think we have every reason to feel happy with the development of the technology which

has taken place and with the capacity of our scientists.

DR. (SHRIMATI) SAROJINI MAHISHI: Sir Kalpakkam being the only plant having no foreign technical collaboration, may I know the cost of production per unit of atomic energy produced in Kalpakkam? How does it compare with that produced in Tarapur and that produced in Rana Pratap Sagar and how do these rates compare with international cost of production per unit of atomic energy?

SHRI SHIVRAJ V. PATIL: Now, as far as the Madras Atomic Power Station is concerned, we are charging 41 paise per unit. As far as the Tarapur atomic power plant is concerned we are charging 34.89 paise and Rajasthan, we are charging about 34 paise.

MR. CHAIRMAN: What is the cost of generation?

SHRI SHIVRAJ V. PATIL: These costs are in proportion to the costs which we have incurred in establishing them. As far as my information goes, it is between 50 and 60 paise.

MR. CHAIRMAN: Next question. 42.

DR. (SHRIMATI) SAROJINI MAHISHI: He has not answered the question as to how does it compare with international costs.

Sri Lanka-Tamil Meet in Thimpu

*42. DR. H. P. SHARMA:†

SHRIMATI MAIMOONA SULTAN:

Will the PRIME MINISTER be pleased to state:

(a) whether at the initiative of the Government of India, talks were held between the Government of Sri Lanka and the Tamil Groups in Sri Lanka in Thimpu in the second week of July, 1985, to resolve the ethnic problem of Sri Lankan Tamils; and

(b) if so, what is the outcome of the talks?

THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SHRI KHURSHID ALAM KHAN): (a) With the co-operation and assistance of the Royal Government of Bhutan and the Government of India arrangements were made for talks to be held in Thimpu between the Sri Lanka Government on the one hand and the TULF and representatives of Tamil militant organization on the other. The talks were arranged in keeping with India's policy of providing its good offices to Sri Lanka to facilitate a political solution to its ethnic problem.

(b) It is understood that the talks were exploratory in nature. It has been announced that talks between the two sides will be resumed on August, 12.

DR. H. P. SHARMA: Sir, the Thimpu initiative of the Prime Minister, wherein the representatives of the Government of Sri Lanka and the various representatives of the Lankan Tamils were brought together to the negotiating table, has been acclaimed as one of the most imaginative and this—one hopefully thinks—might turn out to be one of the most fruitful initiatives of the Prime Minister.

†The question was actually asked on the floor of the House by Shri H. P. Sharma.